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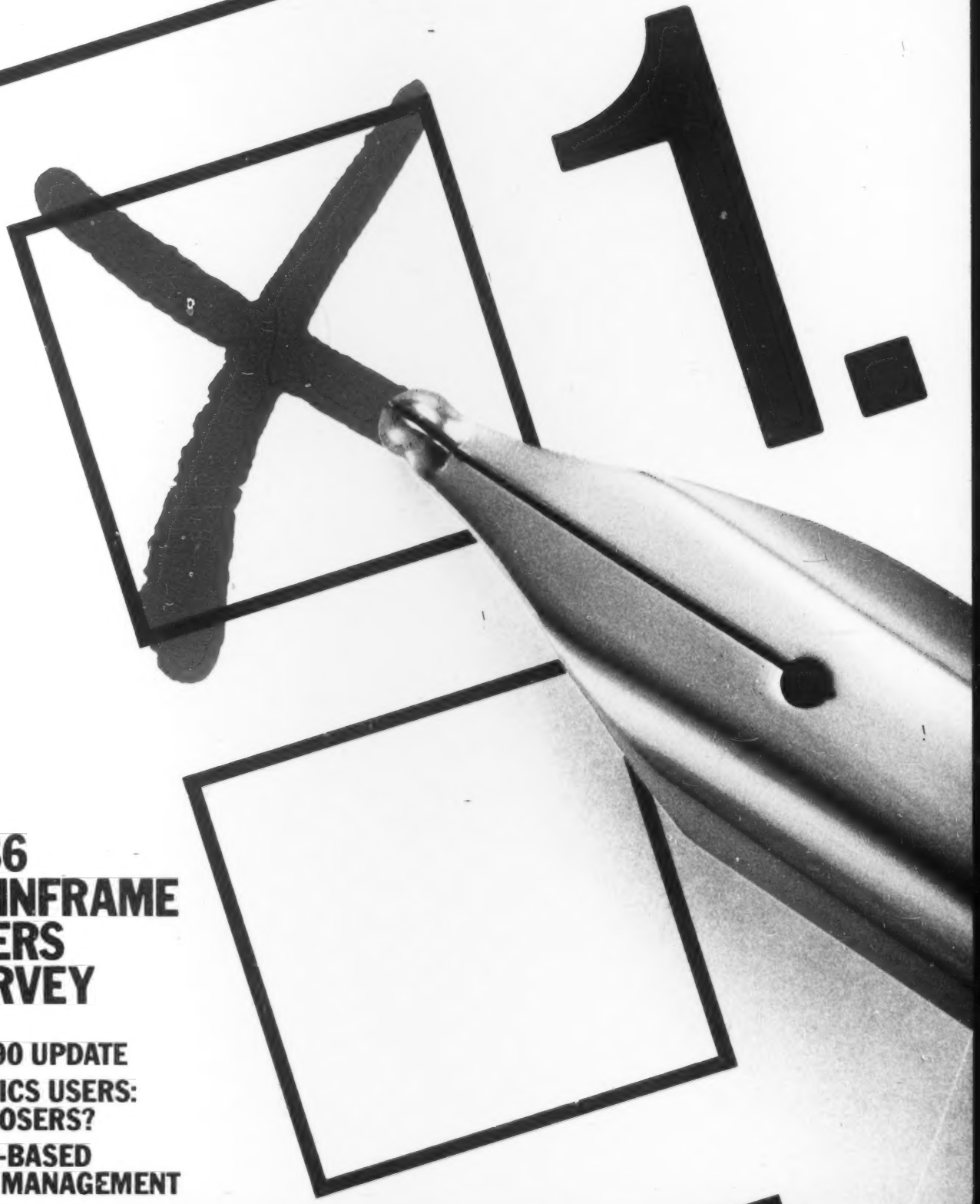

1986 MAINFRAME USERS SURVEY

ALSO:

A 3090 UPDATE

MULTICS USERS: BIG LOSERS?

RULE-BASED DATA MANAGEMENT

DATAMATION

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COVER PHOTOGRAPH BY STEVE COOPER

1986

MAINFRAME SURVEY

by John W. Verity

Shipments of its PCs have tapered dramatically, but IBM's efforts to enhance deliveries of its 3090/Sierra mainframes have paid off in a swell of orders. Meanwhile, distributed processing is taking stronger hold among other mainframe company sites, but IBM is muscling in to win an increasing share of that business. These are some of the findings of the DATAMATION/Cowen & Co. 1986 Computer and Telecommunications Industry Survey, derived from a poll of spending plans at more than 3,900 North American mainframe sites. More than 2,600 of those sites listed IBM as primary main frame vendor, giving a unique look at installation activity among the industry leader's customers. The polling was completed Feb. 24, and was followed by a selective survey of large-scale IBM sites just after IBM introduced two new Sierra models that month.

There were other interesting items:

- Single-user workstations have now surpassed minicomputers as the systems of choice for scientific/engineering applications.
- In that same market, Digital Equipment Corp. is showing new strength in workstations and minicomputers, winning market share away from both IBM and Hewlett-Packard. Digital is also showing growth in its share of survey respondents' planned small business systems purchases for 1986 and 1987, up to 18% from 8% last year; Wang's share has dropped to 5% from 9%.
- Not counting new users expanding the market, growth in shipments of IBM PC gear to respondents fell 13% since last year; it had been up 19% in last year's survey, and 109% the year before.
- More than half the survey sites (55%) said they had connected personal computers to their mainframes, while an additional 27% plan to do so in the following two years. Most interconnected pcs, however, were found to be used as dumb terminals.
- A decided trend away from large host-based office systems was discovered, even among IBM sites. Instead, departmental-based systems are catching on. At the same time, the use of pcs in office systems appears to be leveling off.

As usually happens during the first year of a new IBM product cycle, the company's mainframe business is quickly cen-

tering on the 3090/Sierra line of systems. After just half a year of shipment, the 3090 already comprises more than a fifth of the respondent installed base in dollar terms; 60% ofthe base's value was made up of 308X machines. That mix will take a dramatic shift in coming months, however. In terms of dollar value, the 3090s are expected to dominate the company's shipments in 1986 and 1987. Fully 59% of the total value of systems to be installed by survey respondents during that time will be 3090 gear, followed by 28% for 308X machines, and 13% for 4300 hardware.

Systems in the 303X family are expected to drop to 1% of the total. A large percentage of respondents' planned 3090 installations, 38% to be exact, will go in as totally new systems, not as replacements. According to the survey, another 3% will replace plug-compatible machines, primarily Amdahl's, and 34% will replace 308X hardware.

ROSY OUTLOOK TEMPERED

As rosy as that outlook may seem, its effect on IBM's profitability will be tempered by aggressive price discounting for 3081, 3084, and 3090 systems. Users indicated they received an average 9.8% discount on systems of that size that they last acquired from IBM. Discounts on 4361/41/81 and 3083 machines were in the 6.4% to 6.5% range. (On the other hand, Amdahl and National Advanced Systems [NAS] were found to be discounting by as much as 17%.)

Meanwhile, users are buying—not leasing—IBM systems more than ever, leaving few leased systems to be converted to purchase in the future. Purchase will be the way to go for 95% of the mainframe installations planned by survey respondents for the following 24 months. A heavy concentration of purchasing at the upper reaches of the IBM performance range has left the lease portfolios of both third-party leasing companies and IBM Credit Corp. heavily weighted with midrange systems: about half of each portfolio would seem to be 4300-class leases.

Users' planned peripherals installation activity is up over the previous year in all categories, with IBM the vendor of choice. Just over two fifths of the responding sites said they would add disk drives this year; just under a fifth said they would add tape drives; about two fifths said they would add terminals.

IBM's dominance of the increasingly important 3380-class disk drive market is intact. The company will supply 86% of the disk drives respondents said they will install during 1986 and 1987. Of the plug-

FIG. 1

NEED FOR ADDITIONAL CPU AND DISK CAPACITY GREATEST AMONG IBM'S LARGE SYSTEMS CUSTOMERS

Query: How well set is your organization currently in terms of already-installed capacity for its 1986-1987 processing needs?

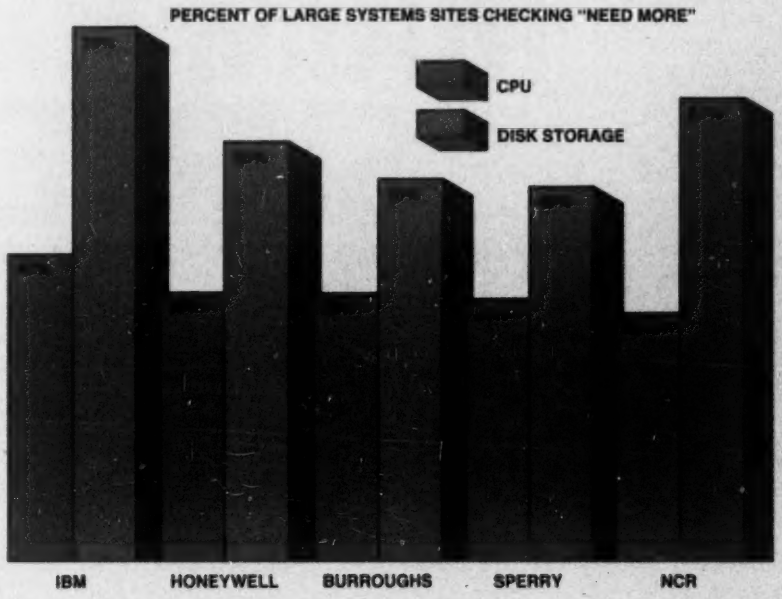


FIG. 2

AMONG PCMS, NAS GAINING MOST GROUND

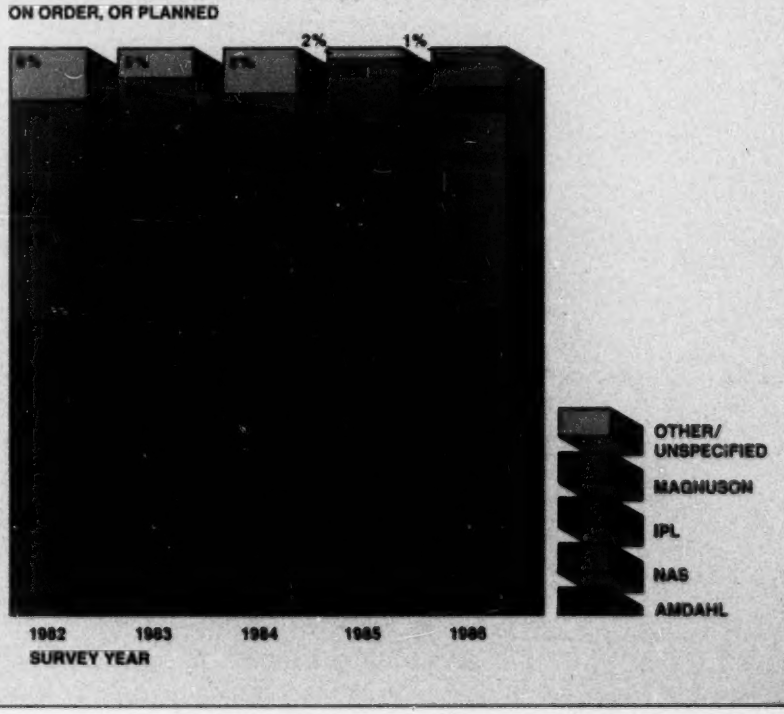


FIG. 3

IBM LESS AND LESS CHALLENGED IN MAINFRAME-RELATED DISK MARKET

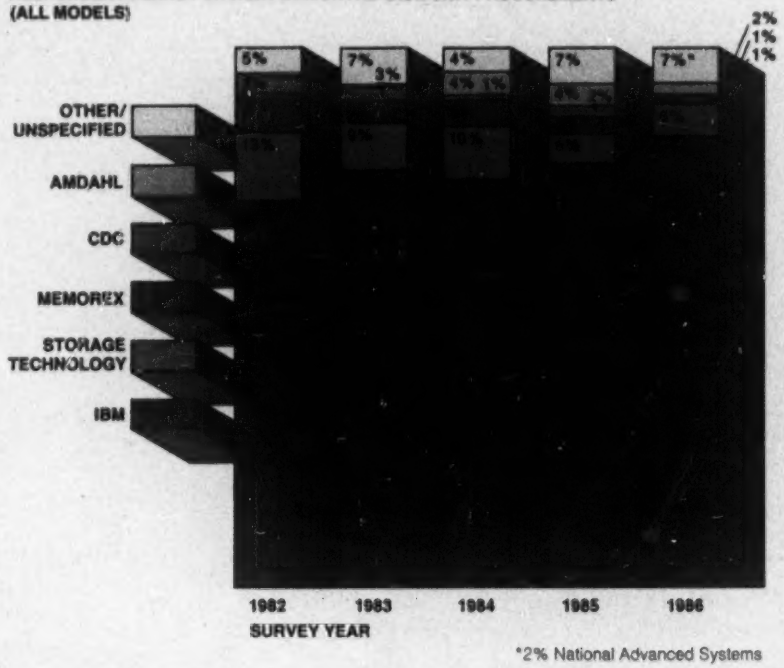
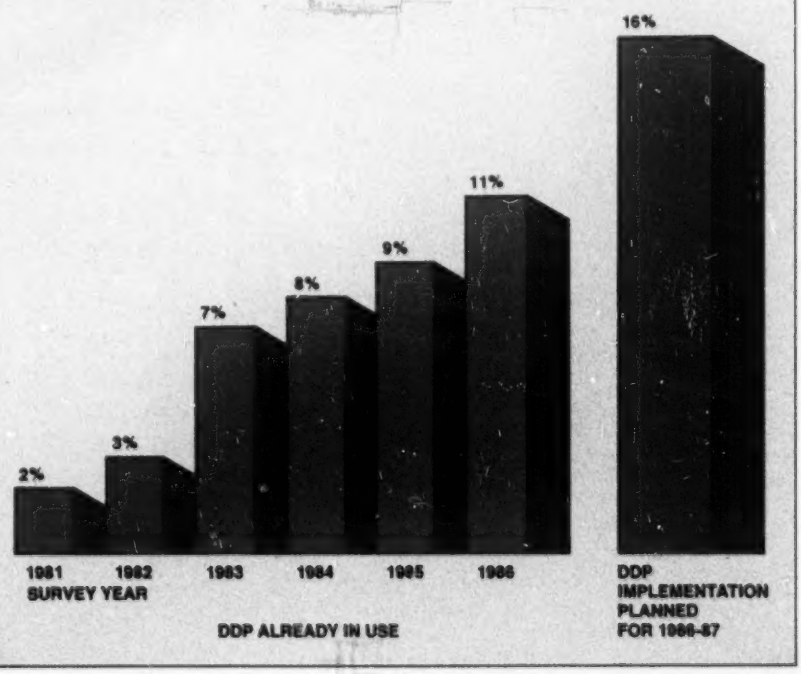


FIG. 4

IBM GAINS IN DISTRIBUTED DATA PROCESSING (DDP) AMONG BUNCH SITES



compatible companies, Storage Technology can look forward to doing the best, with 5% of the planned total (up from only 2% in last year's outlook). Amdahl and NAS, both selling Japanese-made drives, will pick up another 2% each. Double-capacity 3380 drives promise to account for 42% of the installations for this 24-month period. As a fraction of the total number of DASD bytes installed with respondents, 3380-class drives now account for 83%, up from 78% last year.

IBM SALES OF TAPE DRIVES UP

With its 3480 tape cartridge unit in volume production, IBM carried into this year its '85 resurgence into the tape drive market, which it had let slide to Storage Technology and others in recent years. The survey showed that IBM stands to install 65% of the tape drives going in this year and next, off a bit from its 67% in last year's survey; StorageTek should get 14% of those units, down from 23% last year; and Memorex can expect a mere 2%, half its expected take last year.

In the crt terminal arena, IBM may also lose a few points of share, dropping to 59% from 63% last year. Gaining ground will be ITT-Courier, up to 10% from 4%, and Memorex, up to 5% from 2%.

The need for extra capacity during the following 24 months is expected to be greatest among sites using large-scale systems, but in general there are no signs of excess capacity buildup in actual monthly usage statistics. Overall, users indicated they are using their systems at about 73% of their total capacity, or 522 hours a month. The need for additional disk storage will be most pronounced among users of large systems: 74.2% of 3083 sites said they would need more DASD during 1986-87, compared with 71% of the larger sites.

Plug-compatible processor manufacturers Amdahl and NAS have lost another two percentage points off the value of their large-scale systems installed by respondents: their combined total is just over 11%, compared with just over 13% measured last year. Amdahl has the most, over 7%, down from just over 11% last year, while NAS has gone to 4% from just under 2% last year. Users of these companies' machines indicated, however, a declining disaffection with the vendors, particularly in the case of NAS: last year, 24% of the users running NAS gear said that when the time came they would switch their hardware for IBM's; this year, only 18% said so. Several measures of user attitudes toward their pcm vendors showed great improvement for Amdahl and NAS, while IBM lost

favor with users compared with last year's survey, with the shift most adverse for IBM in the low- to mid-range of its line.

Users of the 575 Honeywell systems installed at respondent sites indicated plans to install an additional 281 machines from that vendor in the next two years. The majority of these will be Level 6 minicomputers. In general, users of Honeywell Level 6 and DPS 8 mainframes are not expecting any major mainframe announcements this year from the company, even as those machines approach the end of their product cycles.

Demand for additional system capacity at year-end is expected to be higher among large system sites than among small ones. Meanwhile, Honeywell's virtual memory GCOS 8 operating system is catching on with large systems users. In fact, 77% of small DPS 8/Level 66 survey respondents, 73% of large DPS 8/Level 66 respondents, and 89% of DPS 88 users expect to be converted to the operating system by the end of 1987. Some 78% of the DPS 88 respondents said they had already made the conversion.

As a percentage of their installed base's dollar value, the Honeywell respondents seemed subdued in their planned mainframe installation activity. While this survey two years ago showed them planning to acquire mainframe gear (excluding the DPS 6) worth 14% of their installed base, respondents this year expected to install only 10% in the coming 24 months. In terms of units, the outlook seemed a little brighter, with the installed base expected to grow by 15%, up from 13% in the previous two surveys. The subdued outlook is attributable to the limited takeoff of the DPS 88/90 mainframes and a winding down of the DPS 8 product cycle. It should be noted, too, that General Electric, a major Honeywell customer that installed DPS 88s at a heavy rate in 1985, is significantly underrepresented in this survey because of its corporate nondisclosure policy; had its numbers been included, the year-to-year picture would be worsened.

SOLID ADD-ON ACTIVITY

Add-on activity among Honeywell users looks solid, however. Almost 45% of the respondents planned to add disk drives, with Honeywell expected to garner about half of that business and plug-compatible manufacturers the other half. About 8% of the respondents planned to add tape drives, about 15% add-on memory, and 33% terminals. Honeywell, however, can look forward to getting only about half of that terminal business.

FIG. 5

DEC RESURGENCE IN TECHNICAL WORKSTATION AND MINICOMPUTER SECTORS

Query: Who is/will be your principal minicomputer and/or workstation supplier for these scientific/engineering applications?

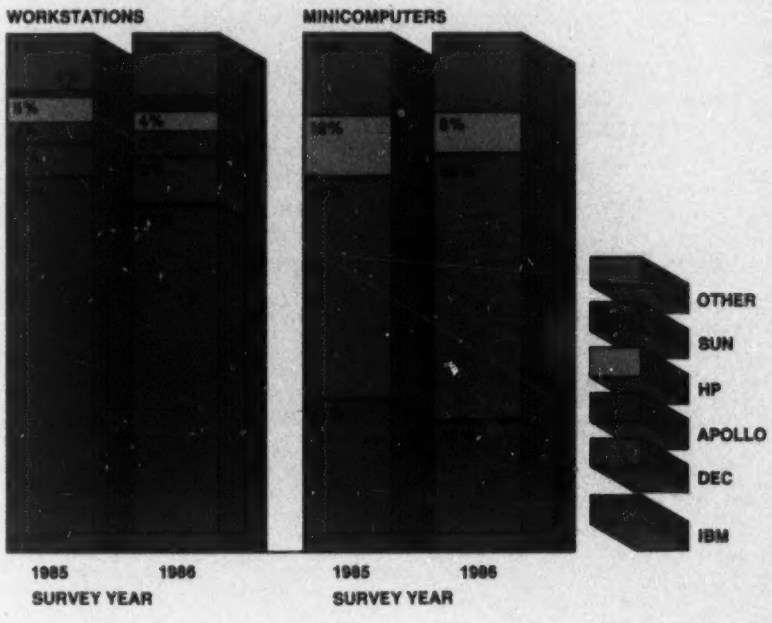
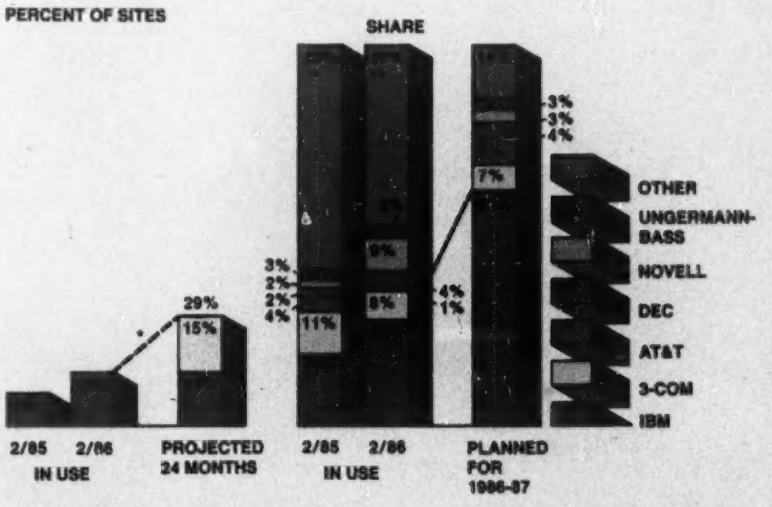


FIG. 6

RAPIDLY EMERGING IBM PRESENCE IN LAN MARKETPLACE

Query: If your organization has installed or plans to install a local area network (LAN), who is the supplier?



*44% compound user base expansion

**Includes Sytek (8% 2/85, 5% 2/86), Corvus/Omninet (8%, 4%), Xerox (4%, 3%), Wangnet (3%, 3%), Network Systems Hyperchannel (3%, 2%), etc.

Honeywell's long-term strategy for the past few years has been to use its DPS 6/Level 6 minicomputers as distributed processing adjuncts to its mainframes. The impact of the Level 6 machines has now leveled off. Among Level 64 mainframe sites, 44%—up from 43% in last year's survey—indicated they will use or are using the Honeywell minis. Among larger mainframe sites, this year's figure is 50%, down from 53% last year.

Like other mainframe companies, Honeywell has strived in the past few years to leverage off its large machines into the faster-growing office systems market. The company is showing modest but growing success with that strategy. Among users of medium- and large-scale mainframes, 27%—up from 20% last year—have installed or plan to install Honeywell's DPS 6 office automation systems. Another 16% said they planned to evaluate the Honeywell office gear.

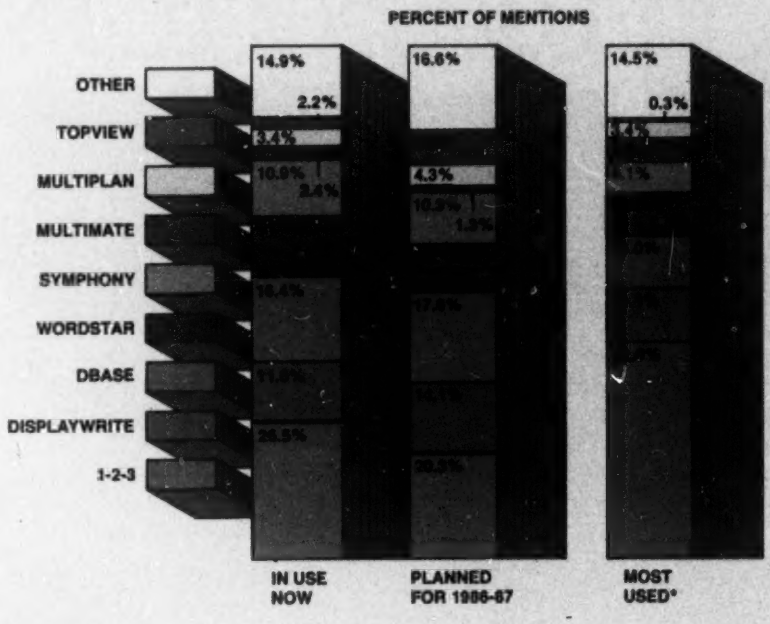
Users of Sperry systems showed mixed signs in this year's survey. The computer company seems to be doing well with its Sperrylink and personal computer lines, but at the mainframe end of the spectrum, spending plans are expected to be subdued. The firm's 1100/70 product is winding down and the 1100/90 cycle appears to have crested. As a result, Sperry sites indicated that, as a percentage of the value of their installed base, they would install gear worth 12% during the following 24 months. Last year's comparable figure was 19%. In terms of units, comparable percentages for the 1986 and 1985 surveys were 17% and 19%, respectively. Overall, the upgrade and add-on business potential seems most positive at the high end of Sperry's product line.

Sperry sites were asked to indicate if they planned to install additional processors on their mainframes during 1986. Among users of 1100/60s and /70s, 12% said they would add such gear; among 1100/80 sites, the figure was 13%; and among 1100/90 sites, the figure was 20%. As for peripherals, Sperry's outlook seemed less promising than that for other mainframe companies. While about 37% of the sites said they planned to add disk drives to their systems in 1986, Sperry would pick up only a little more than half that business. In the tape drive area, about 13% of the sites would add equipment, and Sperry would garner all but a fifth of that business. In add-on memory, 17% of the sites are planning activity, with Sperry looking to get about 90% of that business. Sperry will sell terminals to about 22% of its users this year, with another 4% buying from compatible vendors.

FIG. 7

PACKAGED PC SOFTWARE

Query: Which pc applications software packages does your organization use now or plan to use (initial or additionally) in 1986-87?

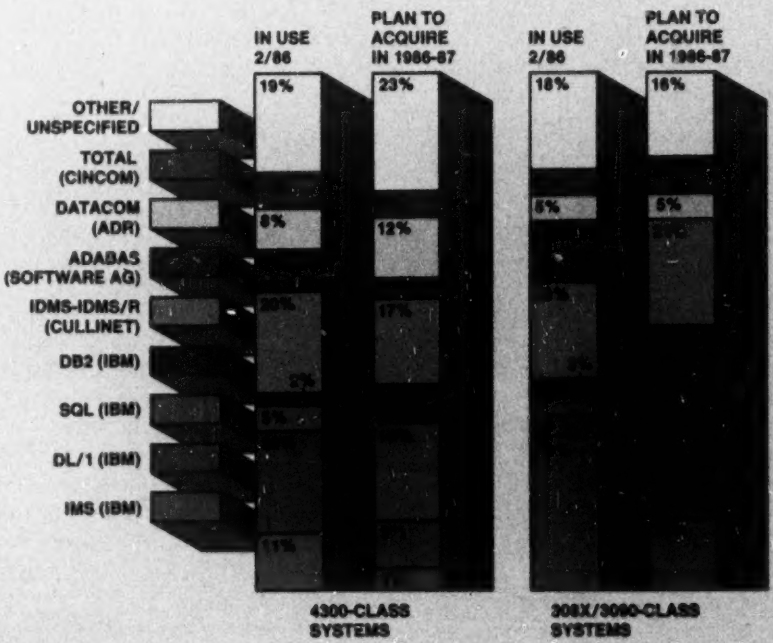


*Respondents asked to check two most used packages

FIG. 8

IBM'S DB2 DBMS TO MAKE GAINS

Query: If you are now using (or planning to use) a DBMS software package on your IBM or IBM-compatible mainframe system(s), which one(s)?



The need for extra capacity is expected to be greatest among sites using large-scale systems.

Sperry is finding good success with its Japanese-built, IBM-compatible personal computers within the confines of its mainframe user base. Asked if they had standardized (or plan to do so) on one or two personal computers, 54% of the Sperry sites said they had chosen Sperry machines and 23% said they had chosen IBM. Sperry pcs were hardly visible among IBM mainframe sites, however. As for Sperrylink, the company's office automation system, initial success at penetrating the mainframe base has been good, but it seems to be slowing. This year, 37% of the Sperry 1100 sites said they had already installed Sperrylink, up from 30% last year; but only 5% more indicated plans to install the system over the next two years.

UNIX HOT ISSUE FOR SPERRY

Another hot issue for Sperry has been its adoption of the Unix operating system. The company still seems to have its work cut out for it. To begin with, Sperry is not a major factor in its customer's minicomputer plans: even among technical/scientific sites, the firm is cited as "principal" mini supplier by only 13% of those responding. Among users of the 1100 series mainframes, only 13% termed Unix "very desirable" for those machines. The 1100/80 sites have adopted the AT&T operating system most, 11% planning to install it and 13% saying they have checked it out and may order it in the future. Only 4% of the 1100/90 sites have plans to install Unix.

Demand for additional equipment among NCR sites is spotty as customers wait for various new products to arrive. Among sites using NCR 8500 and 8600 series systems, many sites said they expect a model 9800 and a model 8800 to be introduced this year. Expected by smaller users are the 9500 and 9600 machines. Looking ahead to next year, the survey indicates that the heaviest demand for extra system capacity will come from large 8500/8600 sites.

Overall demand for NCR mainframe gear during the upcoming 24 months promises to be only moderate, reflecting the lack of any product cycle "driver." As a percentage of the installed base, planned installation activity will measure out at 14% in terms of dollar value and 22% in terms of units. Those numbers compare favorably with last year's 12% and 20%, respectively. (It should be noted that this survey does not take into account NCR's substantial foreign computer business, where the outlook may be more positive.) In three out of four categories, NCR will capture most of its customers' add-on business: more than half of their additional disk drives, all but a sixth or so of the tape drive business, and all but a small percent of their add-on memory acquisitions. Those three categories promise to be more active than was forecast in last year's survey. In terminals, however, overall business will be down, as will NCR's share of the total.

NCR has made good headway with its line of IBM PC-compatible desktop machines: of the NCR mainframe sites that have standardized on a particular brand of pc, 42% had chosen NCR, compared with 37% choosing IBM. However, even though NCR is trying hard to sell its Tower and 9000 line of minicomputer-class machines, 81% of the 8500/8600-class sites are choosing pcs as the vehicles for their small business systems applications. By the way, 48% of those using pcs in such applications are choosing NCR hardware.

In the office systems arena, NCR has made only modest penetration of even its own systems base. Among NCR sites, 10% had installed the firm's Worksaver product and 13% had chosen the Decisionmate; 2% of sites planned to install one of the two products, and 8% and 7%, respectively, planned to evaluate them.

EXPECT UNIX OS FROM NCR

NCR is considered likely to bring out a Unix operating system for its mainframe line. Asked if such an offering would make NCR systems more attractive for future expansion, 8% of responding sites said no and 35% said yes. Compared with last year's respective numbers of 8% and 38% and 1984's 4% and 44%, interest in Unix seems to be waning.

Attracted by new machines and a vendor that evidently has remedied some of its past failings, users of Burroughs equipment are planning to install much new equipment during the next 24 months. Their migration to the A series of mainframes is well under way, as is their acceptance of upgraded operating systems and Burroughs' Convergent Technologies-based workstations. And to the company's credit, this year's survey was the fifth in a row to show solid improvement in respondents' perception of Burroughs' field force.

Overall installation activity for 1986-87 promises to be fairly strong, owing largely to solid demand for large A and V series systems, but not as strong as the exceptional demand indicated in 1984. Measured as a percentage of their installed base, users indicated plans to install gear worth an extra 23% in dollars, compared with the 31% measured in 1984's survey and 15% in last year's survey. In terms of units, 19% more machines will be installed, compared to the 23% in 1985 and the 19% in 1984.

Add-on activity will be quite respectable. About 44% of responding sites said they would add disk drives, with Burroughs capturing more than half that business. About 13% would add tape drives and 13% would add memory, with Burroughs garnering the majority of those businesses, too. As for terminals, 29% of the sites will add hardware, and Burroughs will win just over half that business. Except for a slight dip in memory add-ons, each of those peripherals categories showed an increase over last year.

The survey revealed broad anticipation of as-then-unannounced new systems throughout the Burroughs product line. The strongest anticipation was found among large B7000-class sites, where 26% expected new hardware this year. Meanwhile, the survey revealed that by the end of 1986, roughly half the B6000/7000 sites will have completed the switch to the A series mainframes. At the time of the survey, 36% of former B6800/6900 users and 17% of former B7800/7900 users had already made such upgrades; of those that had not yet done so, 21% and 32%, respectively, said they would upgrade to the A machines this year. Asked if they have already upgraded their operating systems or plan to this year, A series users were most positive. For instance, among A-9 users, 7% said they will have Interpro 3.5 installed by 1987 and 71% said they will have MCP 3.6 A/S; among the A-15 users, the comparable figures were 16% and 64%.

Among the medium-scale users, response to the V series machines has been fairly good. An expected broadening of that product line should help accelerate migration. Among B3900/4800/4900 sites, 13% have already installed a V series mainframe, 13% plan to install one during 1986 and 11% plan to install one next year.

An increasingly large segment of Burroughs users are planning to use the firm's B25/28 products, which are based on Convergent Technologies designs. Already using or planning to use the small machines are 37% of B1000/A-3 sites, 42% of medium-scale sites, and 48% of large-system sites. Meanwhile, the firm's OMS II office system line is off to a more auspicious start than the ill-fated OFIS 1 line of a few years ago. At B6000/A-9 and B7000/A-15 sites, for instance, 2% and 6%, respectively, have the new gear installed, and another 9% and 12%, respectively, plan to install it.

To order the complete 1986 DATAMATION/Cowen & Co. mainframe survey results, priced at $850, please call Laurie Schnepf at (212) 605-9679.